UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,491	02/11/2002	John Booth Bates	2001-0621	6019

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EXAMINER
LIANG, LEONARD S.

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Applicati n N .	Applicant(s)
Office Action Summary	10/073,491	BATES ET AL.
	Examin r	Art Unit
	Leonard S Liang	2853

-- The MAILING DATE of this c mmunication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 March 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,2,7-11 and 14</u> is/are rejected.

7)☒ Claim(s) <u>3-6 and 12-13</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 3 and 12 are objected to because of the following informalities: Claims 3 and 12 disclose "calculating whether the following mathematical relationship is true: $(Rt-(Rm*p))-Rl\#2*Rp$". Based on page 7 of the applicant's specification, it is construed that the claim should state "calculating whether the following mathematical relationship is true: $(Rt-(Rm*p))-Rl<=2*Rp$". Appropriate correction is required.

Claim Rejections - 35 USC § 102

     The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

   A person shall be entitled to a patent unless –

     (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1-2, 7-11, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Cleveland (US Pat 5677716).

     Cleveland discloses:

- {claim 1} A method of printing on a print medium with a printhead in an ink jet printer, the printer having a minimum distance the print medium must be moved in an advance direction to overcome advancement errors associated with equipment for advancing the medium, to thereby move the medium a reliable distance (column 1, lines 26-36; column 3, lines 10-42; column 13, line 66 –

column 14, line 59; column 23, line 30 – column 24, line 13); advancing the print

medium in an advance direction a predetermined amount during a first advancing

step; printing on the print medium with the printhead in an area corresponding to

the predetermined amount during a first printing step; determining an end of

printable area on the print medium in the advance direction; advancing the print

medium in the advance direction a fixed minimum reliable move amount during

a second advancing step, dependent upon the determining step, the minimum

reliable move amount being equal to the minimum distance and less than the

predetermined amount (column 1, lines 26-36; column 3, lines 10-42; column 13,

line 66 – column 14, line 59; column 23, line 30 – column 24, line 13); and

printing on the print medium with the printhead in an area corresponding to the

minimum reliable move amount during a second printing step (figure 2a-2d;

column 3, lines 10-42; column 14, lines 52-59; column 23, lines 30-65; column

24, lines 1-13)
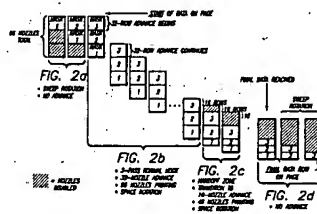
- {claim 2} the first printing step is carried out using multiple pass printing, the
  multiple being an integer p (column 17, lines 53-64)

- {claim 7} the predetermined amount corresponds to an integer divisor of a height
  of the printhead (column 23, lines 30-67; column 24, lines 1-12)

- {claim 8} the first printing step is carried out using multiple pass printing, the multiple being an integer p, and wherein the printing is carried out such that a distance d near the end of printable area subject to print degradation is represented by a mathematical expression: $d=(n-1)*m$ (figure 2a-2d; column 3, lines 10-42; column 14, lines 52-59; column 17, lines 53-67; column 18, lines 1-37; column 23, lines 30-65; column 24, lines 1-13; inherent)

- {claim 9} the second printing step is carried out using multiple pass printing, and including the steps of repeating the second advancing step and the second printing sep until a nozzle of the printhead closest to the end of printable area is immediately adjacent to the end of printable area, and then repeating the second printing step without repeating the second advancing step until the multiple passes on the printable area are complete (figure 2a-2d; column 3, lines 10-42; column 14, lines 52-59; column 17, lines 53-67; column 18, lines 1-37; column 23, lines 30-65; column 24, lines 1-13; inherent)

- {claim 10} A method of printing on a print medium with a printhead in an ink jet printer having a minimum distance the print medium must be moved in an advance direction to overcome advancement errors associated with equipment in the printer for advancing the medium, to thereby move the medium a reliable distance (column 1, lines 26-36; column 3, lines 10-42; column 13, line 66 – column 14, line 59; column 23, line 30 – column 24, line 13); printing on the print medium using multiple pass printing, including the repetitive substeps of: advancing the print medium n an advance direction a predetermined amount

during a first advancing step; and printing on the print medium with the printhead

in an area corresponding to the predetermined amount during a first printing step;

determining an end of printable area on the print medium in the advance

direction; and printing on the print medium using multiple pass printing,

dependent upon the determination of the end of printable area, including the

repetitive substeps of: advancing the print medium in the advance direction a

fixed minimum reliable move amount during a second advancing step, the

minimum reliable move amount being equal to the minimum distance and less

than the predetermined amount and sufficient to overcome advancement errors

associated with operation of equipment for the advancing steps (column 1, lines

26-36; column 3, lines 10-42; column 13, line 66 – column 14, line 59; column

23, line 30 – column 24, line 13); and printing on the print medium with the

printhead in an area corresponding to the minimum reliable move amount during

a second printing step (figure 2a-2d; column 3, lines 10-42; column 14, lines 52-

59; column 23, lines 30-65; column 24, lines 1-13)

- {claim 11} the multiple pass printing of the first printing step is carried out with

  a multiple represented by an integer p (column 17, lines 53-64)

- {claim 14} the second printing step using adjusted multiple pass printing

  includes the substeps of repeating the second advancing step and the second

  printing step until a nozzle of the printhead closest to the end of printable area is

  immediately adjacent to the end of printable area, and then repeating the second

printing step without repeating the second advancing step until the multiple

passes on the printable area are complete

Allowable Subject Matter

3.   Claims 3-6 and 12-13 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

Claims 3 and 12 discloses "calculating whether the following mathematical relationship

is true: $(Rt-(Rm*p))-R1 <= 2*Rp$," which was not found, taught, or disclosed in the prior arts.

Claims 4 and 13 discloses "if the calculating step is a true boolean expression, then

resetting the predetermined amount to a distance corresponding to $((Rt-(Rm*p))-R1)/2$," which

was not found, taught, or disclosed in the prior arts.

Claims 5-6 depend from objected claim 4.

Response to Arguments

4.   Applicant's arguments filed 03/22/04 have been fully considered but they are not

persuasive.

The applicant's amendments to the claims have been considered, but are not considered

to overcome the rejection made in view of Cleveland, especially in view of the teachings of

Cleveland that "This situation may be troublesome in particular when printing near the bottom

end of a sheet, as there the sheet is held only by a tensioning roller--which for other reasons is

advantageously made rather small in diameter...One current development...importantly

mitigates the relative diminution of precision by taking smaller steps in the printing-medium advance, particularly near the bottom or end of each page." It is clear that Cleveland discloses the printer having a minimum distance the print medium must be moved in an advance direction to overcome advancement errors associated with equipment for advancing the medium, to thereby move the medium a reliable distance. The examiner maintains that the applicant must more clearly specify "minimum reliable move amount" so as to differentiate over the "smaller steps" disclosed by Cleveland.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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LAMSON NGUYEN
PRIMARY EXAMINER
05/28/04